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ABSTRACT

When teachers lay the weight of the world's ecological problems on elementary students before they have fostered the kind of connectedness that underlies appropriate environmental education, they create a condition of fear and disempowerment called "ecophobia." The paper suggests that teachers must lead with emotional connectedness before they start to impose environmental issues on children. In childhood development there is a sensitive period for bonding with the earth. Between the ages of 4 and 7, the objective of environmental education should be empathy with the natural world, or "becoming" the natural world; between 7 and 11, the key notion is engagement with, and exploration of, the natural world; and from the ages of 11 to 14, the core idea becomes social action. How children express their developing relationship to place in the maps they draw of their home "turf" is explained, and various place-based curricula are described that focus on enhancing and building children's relationship to place. Included are finding and describing special places; making maps that focus on the important places in town; collecting things from the area being mapped; making "sound maps"; and a game in which students own property in a model village, create a government, and decide issues. These place-based projects allow children to develop a sense of purpose and identity, and provide the right scope and scale for them to approach the complicated social and ecological issues that will later confront them. (TD)

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SENSE OF PLACE EDUCATION FOR THE ELEMENTARY YEARS

David Sobel

ED 421 312

Let's start with singing a song together—a place-based round. I'll teach it and we'll sing it and then we will try to sing it as a round. It goes like this:

Steady as a rock,
Rooted like a tree,
I am here,
Standing strong in my rightful place.

Music is one way to bind kids to place. The experience of singing together should be part of a curriculum that celebrates place and community.

My challenge today is to give you a developmental perspective on sense of place education and how we might go about doing placed-based education at different ages.

First, I will define the problem that the Selborne Project is in reaction to, and articulate the developmental rationale for why this kind of approach is important.

The Problem with Rain Forest Education

If you go into classrooms from New Mexico to New York, instead of the Selborne Project, what you usually find is kids learning about tapirs and poison arrow frogs and biodiversity. They hear about the murder of activist Chico Mendez and watch videos about the plight of indigenous people. Educating children about rain forests, endangered species, and ozone depletion has swept the country.

Last year my first grader came home and said that a thousand acres of rain forest were cut down between snack and lunch time. Lots of environmental educators see this as a sign of success. They feel their work has paid off, but I find myself feeling concerned. But don't get me wrong. I'm ardent about protecting the rain forest but I think a lot of this rain forest education is happening at too early an age. And the end result may actually be contrary to what we want to accomplish.

While conducting research for *Childhood's Future*, journalist Richard Louv interviewed children in the neighborhood and elementary school he grew up in. He noticed that there was a big difference between the children's relationship to nature and what he experienced there 30 years ago. He said,

> *"While children seem to be spending less time physically in natural surroundings, they worry more about the disappearance of nature, in a global sense, than my generation did. As a boy, I was intimate with the fields and woods behind my house and protective of them. Yet, unlike these children, I had no sense of any ecological degradation beyond my small natural universe."*

Mark K. Baldwin

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And in response to one of Louv's questions about whether he liked to play indoors or outdoors better, one fourth grader responded, *"I like to play indoors, because that's where the electrical outlets are."* This is disturbing. Children are becoming disconnected from their immediate environments and connected to imperiled animals and ecosystems around the world. Teachers contribute to this by teaching about the far away world rather than the world that's right here, like the Selborne Project is doing.

What really happens when we lay the weight of the world's ecological problems on seven and eight year olds? We create what I call ecophobia. Ecophobia is a fear of acid rain, Lyme disease, pollution, and rainforest destruction that results in children saying, "I don't want to hear about this, it's too much." When young children see pictures of bludgeoned harp seals or oil soaked eider ducks, it's hard for them to protect themselves from the pain. We adults have defense mechanisms that young kids don't have to protect ourselves from such harsh realities. Ecophobia engenders a kind of fear before we have fostered the kind of connectedness that is the basis for what we want to accomplish as environmental educators.

This is illustrated by a project done by an eight year old after an endangered species unit. After an afternoon in her mom's studio, she produced a poster proclaiming "Save the Elephants, don't use Ivory Soap." She had made a mistaken connection between the killing of elephants for their ivory tusks, and the ingredients that go into Ivory Soap. Clearly her desire is to make the world right and to protect the planet. But wouldn't it make a lot more sense for her to feel protective about the muskrats in the pond across the street than elephants, which are harder for her to do something about? When we neglect the developmental aspects of environmental education, we alienate children from nature. I think of it as logging our kids; cutting them off from their roots.

I recently read a study by the Swiss National Science Foundation on the relationship between nature experiences, environmental tragedy experiences, and environmental behavior in adults in Switzerland. They found that environmental tragedy experiences were actually counterproductive. The author says, "Fear and disempowerment seem to result from experiences of environmental catastrophes. Although further learning occurs as a result of such experiences, the learning becomes a substitute for action rather than leading to behavior change and action."

If unaddressed, growing fear and anxiety about environmental problems have the potential to turn environmental education into a counterproductive activity. In this study education was actually becoming the behavior that was cushioning Swiss citizens from doing anything more. We want adults who are willing to take a stand and be effective, to sit on county councils, be on the school board, and be community activists, but if we start from the premise of fear that may not occur.

So what do we do instead? Rachel Carson, in her book, *A Sense of Wonder*, a book that never gets old, said:

> *"If facts are the seeds that later produce knowledge and wisdom, then the emotions and the impressions of the senses are the fertile soil in which the seeds must grow. Once the emotions have been aroused, a sense of the beautiful, the excitement of the new and the unknown, a feeling of sympathy, pity, admiration, or love, then we wish for knowledge of our emotional response."*

John Burroughs said it more concisely. He said, *"Knowledge without love will not stick, but if love comes first, knowledge is sure to follow."* What we need to do is reclaim the heart in nature education. We have to lead with this emotional connectedness before we start to impose issues on children.

Some interesting research in this realm is the significant life experiences research, which looks at environmentalists and activists and what it was about their childhood that led to them to being committed activists. Louise Chawla of Kentucky State University, who surveyed this research, says there are two things that you find. They are, many hours spent outdoors in a keenly remembered wild or semi-wild place in childhood or early adolescence; and an adult who taught respect for nature. It is interesting that Roger Tory Peterson, who loved to explore the semi-wild edges of Jamestown as a boy and whose interests were validated by his seventh grade teacher Blanche Hornbeck, fits right into this model.

An interesting conversation emerged in one of our small groups this morning. In his talk Paul Nachtigal said, *"Landscape shapes mindscape,"* but we found ourselves saying, *"Landscape is not enough to shape mindscape."* This is what this research suggests. You need landscape, but you also need adults who provide appropriate modeling, values, and tutelage. Roger Tory Peterson's experience suggests that we need the combination of landscape and appropriate modeling to support the development of environmental values.

A Developmental Perspective

There is a sensitive period in childhood development that is important to consider when thinking about environmental education. Maria Montessori talks about sensitive periods, animal behaviorists talk about critical periods. I think that there is a sensitive period for bonding with the earth and it is between the ages of six or seven and 11 or 12. What that means is that during that time there is a biological predisposition towards this kind of connectedness, this kind of "a-ha" experience that binds a person to the natural world. Our task is to figure out how you maximize the possibility of bonding experiences occurring for children.

Between the ages of four and seven, the latter part of early childhood, the objective of environmental education should be empathy with the natural world. That means "becoming" the natural world, being birds, moving like a deer, hiding the way a rabbit would hide. Activities, songs, and artwork that capture emotional responses can meet that objective.

Between the ages of seven and 11, the key notion is engagement. In other words, connecting with or exploring the natural world. This is a lot of what happens in the Selborne Projects as well as fort building, following streams, keeping nature journals, making paths, that kind of thing.

Annie Dillard, in *An American Childhood*, says:

> *"Walking was my project before reading. The text I read was the town; the book I made up was a map. First, I had walked across one of our side yards to the back alley with its buried dime. Now I walked to piano lessons, four long blocks north of school and three zigzag blocks to an Irish neighborhood near Thomas Boulevard.*
>
> *"I pushed at my map's edges. Alone at night, I added newly memorized streets and blocks to old streets and blocks and imagined connecting them on foot. On darkening evenings I came home exultant, secretive, often from some exotic leafy curb a mile beyond what I had known at lunch, where I had peered up at the street sign, hugging the cold pole, and fixed the intersection in my mind. What joy, what relief eased me as I pushed open the heavy front door - joy and relief because, from the trackless waste, I had located home, family and the dinner table once again."*

Annie Dillard describes exactly the scope of the one square kilometer study area of the Selborne Project. Her significant world was about the size of what you have actually chosen to focus on. Research done by geographer Roger Hart, measures the home terrain of young kids as they develop and he has actually quantified how big the home turf is. The home turf for a rural or suburban child of 10 or 11 is also fairly similar to the square kilometer of the Selborne Project.

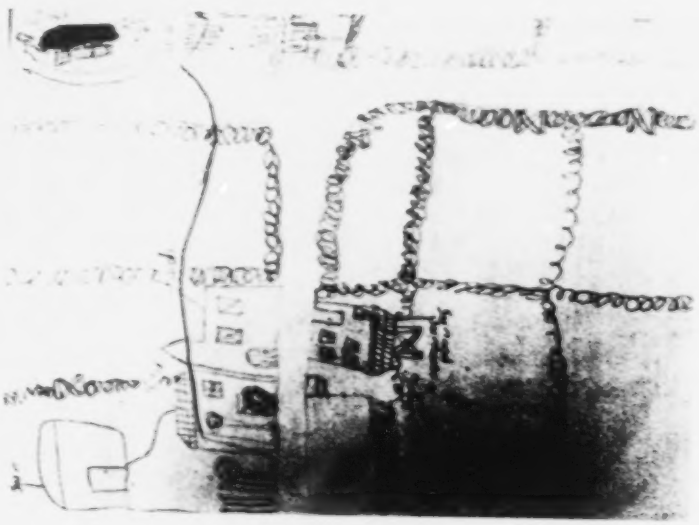
From the ages of 11 to 14, the core idea becomes social action. You don't leave behind empathy and exploration, you take on the next phase. Social action means cleaning up the streams, setting up school composting programs, creating habitat for nesting birds. To actually move into the social action mode at a local level is developmentally appropriate for kids at 11 to 14.

Now let's take a look at slides that illustrate the evolution of children's relationship to place and curriculum that focuses on enhancing and building this relationship.

Children's Maps and Place-Based Curriculum

The scope of a child's home turf, from their own perspective, becomes evident when they draw a map of it. Five-year-olds draw frontal views with a small scope. There is the house, the garden, always a rainbow. There is an enclosed, close-to-family, house-based world depicted in the map of a five- or six-year-old. On the maps of children who are a little older the perspective raises up, you aren't just looking at the map from straight on, you have an angle so you get a sense of a backyard. There is more scope.

By around the age of seven, you start seeing multiple base lines, which convey depth. The scope has gotten bigger, because you now have neighbor's houses in the picture and the perspective is changing. By around nine years old, the perspective rises up to around 45-degrees for panoramic or oblique views. By around 11 you start to get aerial views that include a much bigger scope. Maps made by eight to 11-year-olds also reveal special places, such as forts and dens, places in which they can manipulate their world away from the direct supervision of adults. The increased scope of the maps made by older children is indicative of a biological process of gradual movement into progressively larger significant worlds.



When we look at children's culture and what children tend to do on their own in the natural world, what we find can become the basis for curriculum that pays attention to children's gradually expanding world and their special places.

Children's fascination with special places can be appropriately utilized in curriculum design. Special places I have seen in my work with children include one in England that was in a hedge that had rooms hollowed out for each child as well as a larger "group" special place. Another was one of those places that everyone dreams about. It was like Sam Gribley's hemlock tree home in Jean Craighead George's *My Side of the Mountain*. There was actually a room inside a tree that kids from a whole area of South Devon knew about.

Building forts in hay arms was once very popular throughout New York and New England. It is one of the lost childhood arts, since haying and hay barns are disappearing.

Kids make what are called board houses on an island in the Caribbean called Carriacou. When they are younger they build little board houses nearby, in the neighborhood. When they are older they go up and build bush houses away from the village in the bush. Basically they are places to go while hunting.

If making special places is something that kids consistently do between the age of eight and 11, which I have found to be true, how do you take advantage of it? A teacher in Harvard, Massachusetts designed a project in which she required kids, if they didn't have a special place, to go find one and then to create a map of it with very specific guidelines. The kids had to go and sit in their place and do a sketch map of it. Eventually they had to do a map to scale. They had to include poetry and make a border of natural objects. Lots of interesting products came out of this very structured activity, such as maps, panoramic views, little poems, and legends. It was done with a rubric so there were 20 points for this, 40 points for that, and so on. It was quantitatively assessed, but built on this fascination that kids have for building a bond or connectedness to a special place near their house.

There are a lot of local geography, place-based projects going on in England that are really developmentally appropriate. One was a bulletin board diorama done with seven- and eight-year-olds in a village called South Brent. British teachers are good at emergent bulletin boards, ones created over a number of weeks. Kids were responsible for creating a diorama of the center of the village. Once they did all the buildings, they started to add all the other things. They went on lots of mini-field trips, like in the Selborne Project, and the diorama was the product that pulled it all together.

In a similar activity some slightly older kids created a table-top model instead of a bulletin board. They took lots of field trips to figure out what should go where. Creating the model sharpened their perspective, their capacity to make accurate observations. Lots of problem solving was used to figure out scale and the relative sizes of things. Their model included a goldfish pond with little goldfish and lily pads. While the second and third graders were making the model, the fifth graders were doing a survey map of the same pond. The same place was being explored, but at two different grade levels in developmentally appropriate ways.

In winter the goldfish pond would freeze and the things that lived in it died. The students figured if they could create a place where the salamanders and frogs could overwinter, then the pond would not have to be restocked each year. Their plan to build a bog next to the pond required a detailed and accurate map of the area. They used the surveying technique of taking measurements off of a baseline. Their finished survey map was very quantitatively accurate. The quantitative aspect was conceptually available to about a third of those kids, and it would have worked great for sixth and seventh graders.

"The Parish Maps Project" is one of my favorite place-based education projects I have come across. It was a big national project in England and the idea was to get communities to make maps of their towns or parishes, working from accurate geographical maps, in order to preserve places that were important in the town. The places like lover's lane, the good places to go swimming, the nice places to view ducks on the pond. Not necessarily the rare places, but the important places. There are some beautiful maps that came from that project.

One visiting artist was working on a parish map project with children in the parish of Ipplepen, Devon. His goal was to create a map of a small area near the school centered around a crossroads where five lanes radiated outwards for about 200 meters. One day I joined him as he strolled one of these lanes with a group of students and did two different mapping activities. One was to create a sound map of walking along the lane. They were not to say anything and only take notes of sounds. Here are one girl's notes:

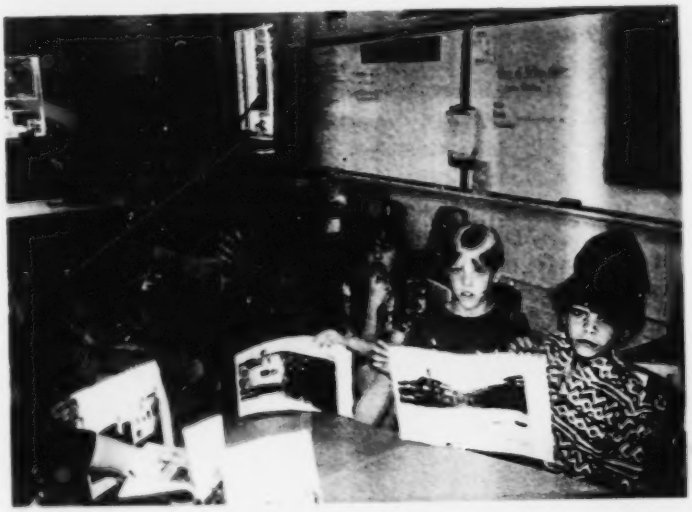
bees buzzing
wind blowing
aeroplane throbbing
cow mooing very loud
sore throats
water rippling—very gently whispering telling secrets.

After walking about 200 meters he said, *"Now on the way back, I want you to collect things that we can use from this place to actually represent things on the map. If we are to represent this muddy lane on the map, we should take some of the mud back and use it to actually paint mud and show the lane."* He showed them how to do rubbings from plants so that could be done as well.

The kids rubbed the pigments from dandelions, marigolds, and cabbage leaves onto the map. The map was four or five feet in diameter. It included a picture of a big field oak we saw, and cows. On another walk they collected leaves and did leaf prints to represent the hedges. On one part of the map was an upside down map of Australia, because something that was made on that site was exported to Australia. The map included bird feathers that were collected along the way, and this sound poem written from notes taken while walking along a lane:

Engine throbbing,
crows crowing,
car door,
Wind blowing,
flies,
us walking
Echoing deep voice,
cows arguing,
burping,
Opera pop songs.
Water running,
singing,
whispering secrets.

Heartbeat.



In Springfield, Vermont, a fourth grade teacher devised a project based on the Black River which flows through the town. For about half a year students took field trips from the Black River's head waters to its mouth at the Connecticut River. Then they undertook the construction of a 20-foot model of the river as it runs through Springfield, including streets, bridges, and buildings.

The teacher found a reflective journal written by a gentleman who was around 80 years old, about growing up in Springfield. It became the literature base for the curriculum. All their spelling words came from this journal about being ten years old in turn-of-the-century Springfield. The science had to do with the physics of hydropower; they built turbines on little streams nearby. While workmen were repairing the bridge across the river, the kids had to get to school by walking down an alleyway and across a rickety footbridge (built in 1900, they learned from the journal). During one of their field trips they met a community volunteer doing the plantings in the park. The man talked to the kids about what he was doing and why, and how he cared about Springfield. The kids then helped him do the plantings. It was one of those wonderful, becoming-part-of-the-community experiences that happens because you are out there.

The teacher took black and white photos of both sides of the river and enlarged them. Then he gave the students a nice problem solving activity after lunch one day. He handed out the pictures and asked them to arrange themselves as the buildings are arranged along both sides of the river.

The students constructed a model of the bridge across the river. It was a woodworking and building activity, as well as a model-making activity. They actually used reinforcing bar and mixed and poured concrete to make the model. By doing this they learned something about the economics involved, and some good science, understanding the physics of cement. They lined the riverbed with slate that they could slice off in thin pieces, and ended up with a really substantial model of the center of Springfield.

The game of Village is a place-based curriculum project done in a number of middle schools. It is intended for fifth through eighth graders. It can also be done as a summer camp project, full-time for about five weeks. When done as a curriculum project it takes about three months to really do it well. In the game of Village students create a miniature village on a scale of one to 25.

To play Village the first thing you do is create a "peep," which is to be your character in the village. Your character gets a name and develops a profession. And it is often a kind of alter ego of the child. Then you homestead a "miniacre" 1/25th the size of a real acre. The mathematics in this project are astounding. You also get a grant from the government of 500 minidollars. All the materials you use to build your house you have to purchase.

Then you mark off your area and build a fence around it, and build a temporary shelter for your "peep" to live in while the house is being built. Then you work in the shop on your house, designing and building it out of wood or cardboard. Different players develop specialties, becoming furniture makers, electricians, clothes designers or road builders.

At the same time you start building houses, you actually create a government. Everyone talks through their "peep", and in the course of deciding what kind of government you are going to use various environmental and social issues emerge: If we put the road here, we have a problem; there is a yellow jacket nest in the way. Do we get rid of the yellow jackets or do we reroute the road? If we reroute the road it's going to take more time and cost more money.

Real issues emerge in the course of creating this small world. Issues that are complex and sophisticated when you have to deal with them "out there" are manageable when you deal with them on a small scale.

At the end of the game there is a big fair. As part of the fair all the property is assessed. Everybody assesses everybody else's property. You get the value back of your property, then there is an auction at which you can spend the money you earned from improving your property. According to the lady who started the game, some kids' property is assessed for a lot, some is assessed for a little, but somehow everybody gets what they want at the auction; it's one of those mysterious things. There is also a minifair, which community and family members visit. Visitors make their own peeps, and there are rides for their peeps to go on. Everyone has a great time.

The whole point of these place-based projects is to allow children to develop a sense of purpose and identity, to provide the right scope and scale for them to start to work on the complicated social and ecological issues that will later confront them.

The chairperson of the planning board in my hometown, Jack Calhoun, is on the board of a new organization called the Monadnock Institute for the Study of Nature, Place, and Culture. He had to go to a board meeting with a definition of "place." Like me, he has trouble coming up with definitions, so he asked his kids, "What does 'place' mean to you?" He pulled together the replies of his eight and five-year-old and he wrote this charming piece which I'd like to share with you. The children said:

> *"Our place is where the people we love and who love us too, live. It is where our friends and neighbors are. It is our house and the trees that show us the changing seasons. It is the view of the hills and Mount Monadnock, the pond in the backyard where we swim, and the village. It is the sounds of the road out front and the sound of quiet at night. It is rain on the slate roof, the bird sounds in the morning, the wind outside during a blizzard and all the bright stars in the whole sky. It is where we feel safe."*

As these children suggest, I hope we can create schools and communities where children feel loved, where they feel connected to nature, and where they feel safe.